TC-5: High Power Electromagnetics

Annual TC-5 Meeting at the
2004 IEEE International Symposium on EMC at Santa Clara, CA
Wednesday, August 11, 2004

Unconfirmed Minutes

1. Chairman Bill Radasky brought the meeting to order at 7:09 am. All the members present introduced themselves, and the following items were discussed. The list of the attendees is attached at the end of the minutes.

2. Bill Radasky went over the draft agenda, and no new items were proposed at this time.

3. Randy Jost, the Secretary read the minutes from the last meeting held in Boston, in 2003 and several minor amendments and corrections were made. Peter Richeson moved that we accept the minutes as amended and Mike McInerney seconded the motion. It was unanimously approved.

4. Mike McInerney discussed the dedicated session on lightning protection that was held on Tuesday afternoon, co-chaired by himself and Elya Joffe. A request was sent out to 12-18 people to present, and four people agreed to participate. One eventually dropped out, resulting in three speakers presenting 5 papers, plus the open forum for discussion. Approximately 150 people were in attendance. The session was very lively, and people stayed until the very end discussing the presentations. This led to a discussion about standards for lightning protection and to whether IEEE should be proposing a new or improved standard. There was some uncertainty as to the specific way to go, but all agreed that the standard presently in place is clearly inadequate. It was pointed out that NFPA is the main driver for lightning protection standards, but that their standard is an installation standard, not a protection standard. As Elya Joffe was in another meeting, this discussion was tabled until he could come in.

5. Bill Radasky provided a report on the paper review process for Santa Clara. There were 15 papers reviewed. Out of that number, 3 were rejected; and two of the 15 papers were nominated for best paper. Thirteen of the papers were on lightning, and there was one each for HEMP and ESD. Bill Radasky pointed out that we need to encourage the submission of papers in other the areas that our TC is responsible for, and to encourage more people to submit papers in the various areas of High Power Electromagnetics.

6. There was some discussion about the fact that EMP is starting to become an important topic of discussion again. Bill Radasky pointed out that the there was a congressional commission formed to study the EMP threat to the US. He provided many of the attendees a copy of the executive report entitled "Report of the Commission to Assess the

Threat to the United States from Electromagnetic Pulse (EMP) Attack," which is volume one of a five volume set of findings (link will be placed on TC 5 web site along with minutes). He also talked about the need to address the Intentional EMI threat, which is getting much more attention in Europe than in the US, especially in the area of open source publications. For instance, Bill will be chairing a special session on HEMP in Zurich next year.

7. Bill also mentioned that the Special Issue on Intentional EMI (IEMI) will be coming out in the next issue of the EMC transactions. This issue took two years to put together and represents an enormous amount of work. The lesson out of this effort is to start early, line up plenty of extra help, and don't assume the editorial staff at HQ will catch all errors in the manuscripts. In addition Bill found the web based paper review process very difficult to deal with and especially hard to correct errors made by reviewers or the editorial staff itself.

8. There was a discussion of the fact that next year's paper submissions will require the submission of a full paper instead of just an abstract. This will definitely have an impact on the symposium review process, since it will take a much longer time to review the full paper than an abstract and a few figures. This is another reason to grow the size of TC 5, so that there are more people with which to share the load. Although the first call for papers went out without this stipulation, a revised call for papers will be going out shortly calling for full paper submission. Bill Radasky will keep us appraised as to what procedures will need to be put into place to implement this and keep committee informed.

9. Next there was a discussion concerning the interest of several board members in moving toward a web-based paper review system that also would produce electronic programs and files to be used at the conferences. Bill Radasky noted that from his experience these web site systems require the authors and the reviewers to waste time and do not really result in more efficiency. Also when errors are made, they are very difficult to fix and we end up shifting the ability to fix things to computer people who do not understand how a conference and a review is performed. While electronic approaches may reduce costs, this should not be the primary factor; the ease of use and efficiency for our volunteers should also be considered. During the discussion it was felt that such web-based systems were premature and that TC-5 should formally inform the TAC of this view. In addition, the idea of an IEEE EMC conference without paper books was thought to be a great disadvantage to the conference attendee. Hopefully the TAC and the board will consider aspects other than saving money before making a change in this direction.

10. Bill Radasky then talked about some new standard activities in the area of Intentional EMI, including one for protecting publicly accessible computers from EMI (P1642) and one for the protection of electronic voting machines (P1643). Each of these is under the control of a different society of the IEEE. Bill talked about some testing that had been

done that had revealed some real vulnerabilities in certain systems, such as cash registers. A standard practice outline has been developed to address this. The intention is to move quickly and have a draft document by next year. We should be trying to get companies such as Dell, Cisco, IBM and Samsung to participate. A request was also made of attendees at the meeting to participate if possible.

11. There was discussion about what to do with the TC-5 web site. IEEE HQ wants TCs to maintain the relevant pages. The feeling by many was that IEEE should do most of that since most of the material is routine, and we should just provide the content as Word files, or equivalent. Consensus was that the word would be passed up the chain that IEEE should be doing most of the work. In the meantime, the Secretary will continue to update the web page as needed.

12. Elya came in from the standards meeting and talked about the discussion going on to form a study group to examine the needs for a lightning protection standard. The study group will have the main tasks in the short run. First, they should examine the existing standards to see what is and isn't covered, and document any shortcomings. Second, they should make recommendations as to whether the IEEE should add a new standard to address this, or whether they should try to improve existing standards. It was concluded that the TC5 role should be to provide support in examining the fundamental technical aspects of this problem as requested by the study group.

13. Maqsood Mohd suggested that we could do a tutorial on IEMI, HPM or HEMP at next year's symposium. Mike McInerney suggested that we do it on IEMI, since there is so much activity going on in this area. Possibilities include presentations on basics, impact on computers and automobiles (since we will be close to Detroit), protection approaches and simulation capabilities. The consensus was to try and put together a tutorial for Chicago in this topic area.

14. Mike McInerney made a motion to adjourn and the motion was seconded by Bill Croisant. Motion passed unanimously. The meeting adjourned at 8:53 am.

Respectfully submitted

Randy Jost, Secretary

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List of Attendees

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